

Abstract Submitted
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Magnetic effects on the low-T/W instability in proto-neutron stars CURRAN MUHLBERGER, Cornell University, SPEC COLLABORATION — Dynamical instabilities in proto-neutron stars may produce gravitational waves whose observation could shed light on the physics of core-collapse supernovae. When born with sufficient differential rotation, these stars are susceptible to a low-T/W instability, but such rotation can also amplify magnetic fields to strengths where they have a considerable impact on the dynamics of the stellar matter. These fields might suppress the low-T/W instability or enable additional non-axisymmetric behavior, complicating future observational interpretations. Using a new MHD module for the Spectral Einstein Code, we have simulated these systems in full 3D GRMHD. Here we will discuss the results of these studies, examining the interplay between fluid and magnetic instabilities in the early lives of neutron stars.

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